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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,152	07/03/2001	Michael Wen-Chein Yang	POLY-1193	7052

7590 02/28/2003

Woodcock Washburn Kurtz
Mackiewicz & Norris LLP
One Liberty Place - 46th Floor
Philadelphia, PA 19103

EXAMINER

HAMILTON, CYNTHIA

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 02/28/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/898,152

Applicant(s)

YANG ET AL.

Examiner

Cynthia Hamilton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/24/2002 and 11/20/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-22,25-28,30-42,44 and 45 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☒ Claim(s) 30-39,41,42,44 and 45 is/are allowed.

- 6) ☒ Claim(s) 15-22,25-28 and 40 is/are rejected.

- 7) ☐ Claim(s) _____ is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 20, 2002 has been entered along with instructions to consider the papers filed October 24, 2002.

2. Claims 30-39, 41-42, and 44-45 are allowed.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 40 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention or, in the alternative, Claim 40 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The language of claim 40 requires that the dopant absorb radiation having a wavelength of 10.6 μm . Applicants cite pages 17-19 for support of this point. The examiner notes that in those pages the slip film is found ablatable at this wavelength but no statement as to the dopant causing the ablation is made. The ablation may be due to the binder used. It is unsaid here. The examiner does note that on page 9

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of the specification at lines 9-14, the "UV absorber must also exhibit a specific response to excitation by laser at an appropriate wavelength: It must allow the ablation of the slip film." It is unclear whether this statement means that the UV absorber used on pages 17-19 (the only reference to a slip layer that is IR ablatable and thus the only example of such a system) absorbs at a radiation having a wavelength of 10.6 μm or that the other components ablate at this wavelength and the UV dopant does not interfere, i.e. allows the ablation of the slip film. Does "allowing" the ablation mean absorbing at the wavelength of the absorption? The dopant Uvinol D 50 used in the sole example is cited on page 9 as being the cause of ablation at 351 nm wavelength. Thus, it is unclear whether there is support for this amendment in the original specification or if there is such a vagueness in the language that it is unclear what is meant with regard to absorbing radiation at this wavelength. The examiner also notes that if the dopant used on pages 17-19 is inherently absorbing at said wavelength and evidence is given to show its absence stops ablation of the slip layer of the example of pages 17-19, then this is sufficient evidence in the original specification to support the absorption set forth in claim 40. The issue of what part cause ablation to occur is clouded by evidence on page 4 of the specification that the polyamide suffers some thermal ablation during ablation of the slip layer with a 248 nm laser.

6. Applicant's arguments filed October 24, 2002 have been fully considered but they are not persuasive. Applicants' statement to this rejection is "Those of skill in the art further understand that a material used as the UV absorber in the ablatable layer could be active in the IR range, and could absorb both UV and IR radiation...." Then conclude that "based upon the description provided in the specification, those of ordinary skill in the art understand the UV absorber to be a material that can absorb IR radiation (see pages 17-19 of the specification as filed). The

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rejection for indefiniteness or lack of written description is, therefore, believed to be improper..."

The examiner notes that applicants refer to the Murphy declaration, paragraph 13 to support the idea the UV absorber to a material that "can absorb IR radiation". Mr. Murphy states "A material would be considered to be a "UV absorber" according to the 1993 patent application so long as it absorbs UV radiation, whether or not it also happens to absorb IR radiation." Thus, Mr. Murphy recognizes that a UV absorber is not by definition also an IR absorber. Thus, the premise of supporting the UV absorber as the IR absorber in the layer of Example 3 of the 1993 application and the current application is that it is possible that the UV absorber could be an IR absorber. The examiner first notes that applicants do not address the clarity issues in the rejection. The examiner notes that compliance with the written description is a question of fact which must be resolved on a case-by-case basis. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d at 1563, 19 USPQ 2d at 1116 (Fed Cir. 1991). The examiner views this declaration from a person skilled in the art as addressing question of fact and addresses the factual evidence given by Mr. Murphy to support the issues raised. See *In re Alton*, 76 F.3d 1168, 1176, 37 USPQ2d 1578, 1584 (Fed. Cir. 1996). Mr. Murphy never declares the 1993 application discloses the UV absorber is an IR absorber. He only declares that the UV absorber could be an IR absorber as well. The examiner has stated the record is unclear as to whether the Example 3 of the specification shows a single embodiment wherein the UV absorber is an IR absorber. Applicants have not addressed this lack of clarity. Thus, if the UV absorber is not an IR absorber in Example 3 then there is no actual reduction to practice of the claimed invention. Applicants have not shown the applicants had the embodiment of claim 40 in their possession at the time of filing the application thus the examiner finds a lack of written description because the specification lacked the full, clear, concise and exact

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written description which is necessary to support the claimed invention. That the UV absorber could have a property is not the criteria for claiming the property. What 1993 applicants clearly disclose is the layer of Example 3 in the 1993 application is IR ablatable at 10.6 nm. Applicants do not present evidence that the UV absorber of Example 3 is an IR absorber. This is the issue with respect to instant claim 40. That the UV absorbers are known in the art to be possible IR absorbers is not the issue. The rejection stands.

7. Claims 15-22 and 25-28 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The process of instant claims 15- 22 and 25-28 use a photosensitive element with an ablation layer "which is ablatable by infrared radiation and opaque to non-infrared actinic radiation". The generic group of infrared radiation ablatable layers is not explicitly disclosed in this application. There is a generic disclosure to laser radiation and species specific disclosure on page 18, top paragraph to a sealed - CO2 absorbing laser at 10,600 nm (10.6 um) which worked but not up to the standard required by the 1993 applicants in the 1993 patent application and that a YAG laser at 1,060 nm (1.06 um) did not work. The examiner holds to be fact what is found in lines 15-20 of page 14 of the 1993 application which is :

"A laser is employed to precisely remove the slip film exposing the photopolymer underneath to subsequent flood exposure and cure. The wavelength and power of the laser should be such that the laser treatment can ablate the slip film without damage to the photopolymer just beneath."

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In the paragraph bridging pages 19-20 of the 1993 application, is found that in the trials where complete ablation was achieved with the sealed- CO₂ laser at 10.6 μm , i.e. in the IR range, the underlying photopolymer layer surface was highly textured, the plate surface uneven (from Table II) and the resolution was poor for the letters. 1993 applicants state:

" ... it was seen that the basic idea of the laser-imaging printing plate was demonstrated, and that use of the CO₂ laser resulted in thermal ablation with consequent loss of resolution."

On page 19, lines 3-7, the 1993 application discloses:

"Two different laser systems were employed for the ablative studies: a sealed CO₂ absorbing at 10.6 μm and a YAG at 1.06 μm . The YAG laser was found to be essentially ineffective in causing any ablation."

The examiner interprets the words of pages 19-20 to mean the sealed- CO₂ laser ablation experiments did not meet the standard of page 14 that the photopolymer just beneath remain "without damage". This ablatable layer is not limited to UV ablatable systems. It is generic to lasers at all wavelengths that meet the requirements set forth on page 14 of the 1993 application but the 1993 applicants gave no examples of IR systems which met the standards they set forth. There is no disclosure to the genus of infrared ablatable layers. Further, the generic grouping of opacity to "non-infrared actinic radiation" is not found in the original disclosure and claims. The original disclosure is to a photocurable article with a UV absorbing dopant and to a UV absorbing layer. In all instances, the original disclosure makes use of a UV absorber. The instant process of said claims is not limited to the presence such a UV absorber. Thus, the generic film "opaque to non-infrared actinic radiation" is not originally disclosed nor is the

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generic process of using a film without a UV dopant found. The introduction of claim changes which involve narrowing the claims by introducing elements or limitations such as the introduction of an infrared absorbing material to a binder which are not supported by the as-filed disclosure is a violation of the written description requirement of 35 U.S.C. 112, first paragraph. See, e.g., *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1571, 39 USPQ2d 1895, 1905. Further, there is no disclosure made to a photosensitive element without the presence of a dopant having a high extinction coefficient in the ultraviolet range. The broader "non-infrared actinic radiation" is not fully supported by the original disclosure and claims. The ultraviolet range is essential because the entire scope of the 1993 application is directed to ultraviolet photopolymerizable layers. There is no indication anywhere in the 1993 application that the 1993 applicants intended to encompass any system that was not UV sensitive. The instant claims are not so limited and as such are broader than the 1993 disclosure. The examiner notes that the instant claim language to non-infrared includes photopolymerizable systems actively polymerizable in the visible range. The 1993 application makes no comment or disclosure about visibly imageable systems. Finally, the only support for a layer that could be ablated by infrared laser is that in Example 3 specific to a polyamide. The instant binders for the infrared ablatable layer do not have a polyamide listed as a choice. There is no original disclosure to the presence of an ablation layer comprised of "at least one infrared absorbing material" either. The examiner believes there is insufficient support in the original claims and specification to reasonably convey to one skilled in the relevant art that the inventor(s), at the time of filing of the application had possession of the processes of instant claims 15-22 and 25-28. Applicants have presented claims more generic than the original claims. The written description requirement for a claimed genus may be satisfied through sufficient

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description of a representative number of species. The examiner believes applicants have failed to show enough IR ablatable layer species to claim the genus without a statement in the original specification to the genus. She has pointed that only one IR ablatable layer was disclosed and that one layer that was not IR ablatable under IR imaging conditions given was disclosed. Thus, the unpredictability of the chemical art of ablatable layers is demonstrated to the worker of ordinary skill in the art by applicants' disclosure which supports the examiner's stand that one species is insufficient to represent the entire genus of IR ablatable layers over all laser ablatable layers used by applicants, both UV and IR ablatable. The one species is also specific to an IR ablatable layer with a UV absorber present and a photopolymerizable layer imageable in the UV. Thus, applicants have not presented the broader generic ablatable layer where the UV absorber is not present nor another photopolymerizable layer outside the UV range, e.g. a layer polymerizable in the visible range. Applicants have not established that the original disclosure would lead a worker of ordinary skill in the art to realize only IR ablatable layers to use all the binders set forth in the original specification. The original disclosure encompassed both UV and IR ablatable layers but only under certain conditions. Applicants try to set the non working ablation example also in the IR range as evidence of a second species, but the examiner believes that this is evidence that a worker of ordinary skill in the art at the time of filing would not have concluded all the IR range and all the binders listed by applicants could be used with the UV photopolymerizable layers given. Further, there is nothing in the record that would lead workers in the art to realize applicants intended any other element other than one with a UV photopolymerizable layer was part of applicants invention. On page 6 of the instant specification, applicants state their objective is to make laser-imageable printing plates but this is

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already generally known in the art at the time as they have already set forth in the background.

The next objection level set forth is "to provide a UV absorbing layer for a photocurable article that can be conveniently and accurately removed by laser ablation from the article." Thus, the issue of UV absorbing is part of the laser ablatable layer as part of the solution of a conveniently and accurately imageable plate from the beginning. Thus, the examiner believes a worker of ordinary skill in the art would understand this to be a limit of any plate set forth by applicants.

The next step in the limits set forth by applicants is "to provide a UV absorbing and photoablatable layer for a photocurable article comprising ... polymeric matrix and ... a dopant having a high extinction coefficient in the range of 300-400 nm, the layer responding to a threshold dosage of radiation at a selected wavelength by photoablation of the polymeric matrix.

Higher up on the same page of the specification applicants stated "The inventors have discovered that if a slip film, of the type already in use with flexographic plates, is modified with a strong UV absorber, a laser can be used to engrave the slip film instead of the photopolymer. Thus, applicants' invention revolves around the addition of the strong UV absorber into the ablatable film. Thus, the UV dopant is key to applicants' invention as they describe it in their specification. The examiner believes that this is sufficient evidence to make a worker of ordinary skill in the art to expect a UV absorbant to be present at all times in any element that would meet applicants disclosed invention as originally filed. Such a limit is not present in applicants' claims 15-22 and 25-28. The examiner also believes that the worker of ordinary skill in the art upon believing such a UV absorber is always present in applicants' element would also believe that the photopolymerizable layer would always have to be polymerizable in the UV range. Thus, the examiner believes that this need for UV opacity in the ablatable layer is so

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strongly set forth by the original specification that workers of ordinary skill in the art would not assume layers of opacity in other non-IR ranges such as the visible range were included. The examiner also notes that on page 8, applicants reference "It is critical that the UV absorption be nearly complete..." Thus, the original disclosure is evidence that the UV absorption is critical. This is evidence that applicants by omission of this one element raise the issue whether the applicant had possession of the broader, more generic invention. See, e.g., *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 45 USPQ2d 1498 (Fed. Cir. 1998); *Johnson Worldwide Associates v. Zebco Corp.*, 175 F.3d 985, 993, 50 USPQ2d 1607, 1613 (Fed. Cir. 1999) and MPEP 213.05. The original specification as a whole directs the worker of ordinary skill in the art to use a laser ablatable layer with the UV absorber present that would work with the accompanying UV photopolymerizable layer. The only binder disclosed useful in an IR ablatable layer is the polyamide binder used in the sole example. It is unclear whether the UV absorbant present is the agent of ablation at the IR wavelength used as already stated in the paragraph above in reference to claim 40. The issue of what part cause ablation to occur is clouded by evidence on page 4 of the specification that the polyamide suffers some thermal ablation during ablation of the slip layer with a 248 nm laser. That something cause ablation at that wavelength is clear. . With respect to the need for a UV absorber in the instant claims, the 1993 disclosure states the advantages of the UV absorber throughout the specification and never discloses not using it., Thus, the entire application is drawn to the advantages of a UV sensitive system in combination to a laser ablatable layer. See *Gentry Gallery* 134 F.3d at 1473 at 1480, 45 USPQ 2d 1498 at 1503 (Fed. Cir. 1998) and *In re Sus*, 306 F2d. 494, 504, 134 USPQ 301,

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309 (CCPA 1962). Thus, the instant claims are broader than the written disclosure in this respect and fails to include the essential element of the UV absorber.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 15-20, 25-27 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fan (6,238,837 B1). Applicants have amended the Markush group of binder in claim 15 to exclude cellulosic binders thus removing the issue of anticipation from the originally submitted claims. However, with respect to the use of polyimides, polyesters, polymers of ethylene, polybutylene, polyacrylics, polyethylene,

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polyphenylene ethers and polyethylene oxides, Fan in col. 9 lines 40-58 disclose their use in his IR ablatable layers. Fan cited by applicants has a filing date of May 1, 1995 which is before the filing date of the oldest effective date of the same application, i.e. 08/479,339 filed June 7, 1995. However, the oldest effective filing date is June 25, 1993, drawn to a continuation - in -part of US SN 08/082,689. The examiner had read this oldest application and found the same data supporting an IR ablatable layer in both the current application and the oldest application. It is a series of tests showing that the YAG laser does not ablate the instant layers but the CO2 laser does but only for an ablatable layer with a polyamide binder and a photopolymerizable layer identified as analogous to the "KOR" printing plates. There is no further clarification as to what is in KOR. The instant claims 15-20, 25-27 are only supported in their breadth now claimed by applicants in the amendment filed August 13, 2001. Thus, Fan is seen as prior art for the binders in these claims which are not polyamides and for the processes wherein polyamides are ablated with an Nd: YAG laser. Thus, the examples anticipate the instant processes of claims 15-20, 25-27 and in the alternative the use of any of the binders as set forth in Fan in column 9 in the IR ablatable layers set forth would have been prima facie obvious because they were taught by Fan et al as being suitable. Fan anticipates the instant process wherein butadiene-styrene block polymers are listed as one choice of binder in the photopolymerizable layer. The examiner notes that Fan does not claim a process and the element claimed by Fan is limited to the presence of a monomer as well as an elastomeric binder. However, the process of imaging with an infrared ablatable layer comprised of a binder that can be a polyamide is disclosed. In Fan, see particularly Abstract, col. 2, lines 8-10, 23-28, col. 3, lines 48-65, col. 4, lines 20-31, 55-61, col.

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5, lines 65-67, col. 6, lines 1-35, col. 7, lines 55-63, col. 9, lines 10 through col. 10, lines 48, col. 12, lines 8- col. 13, lines 40 and examples and claims.

11. The Declaration of Mr. Edward T. Murphy under 37 CFR 1.132 filed October 24, 2002 is insufficient to overcome the rejection of claims 15-22, 25-28, 30-42, 44 and 45 based upon description in the June 1993 patent application as set forth in the last Office action because: Mr. Murphy fails to support sufficient facts to support his opinion that the copy of the claims presented to him as claims 15-22 and 25-28 and 40 were described in the June 1993 patent application and that it's inventors invented and thus had possession of the subject matter.

The examiner notes that the only claims under rejection where this is an issue are claims 15-22 and 25-28. Claim 40 is under rejection for other reasons of support in applicant's specification. Thus, declarations from Mr. Murphy with regard to claims 30-39 and 41-42 and 45 are moot. The examiner addressed failures of this Declaration to remove rejections of claim 40 above.

The examiner notes for the record that the claims reviewed by Mr. Murphy are not identical to those now before the examiner. For example, claim 36 no longer contains cellulosic polymer. However, the issues remain essentially the same.

Mr. Murphy discloses that he was the General Manager of Printing Plates for North America and employed by W.R. Grace Company in June of 1993 and at that time oversaw the business unit's research activities and that personnel involved in research and development of printing plates reported to him. The examiner notes that the June 1993 patent application was prosecuted by The W. R. Grace and Co.-Conn. Patent Department. Mr. Murphy states since December 2000 he has been President of GES Corporation wherein he is involved with the

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development, manufacturing and marketing of physical therapy devices. Thus, Mr. Murphy's opinions are considered in view of this connection with the inventors and/or their assignees, past and present.

Mr. Murphy considers himself "to be a person having skill in the field to which the claimed photosensitive elements pertain, and also to be a person who had skill in this field in 1993." The examiner views this declaration from a person skilled the art as addressing question of fact and addresses the factual evidence given by Mr. Murphy to support the issues raised. See *In re Alton*, 76 F.3d 1168, 1176, 37 USPQ2d 1578, 1584 (Fed. Cir. 1996).

First, Mr. Murphy to support his opinion declares that the *1993 application does not require that a particular wavelength of laser radiation or range of wavelengths be used for the ablation*. The examiner agrees with this and considered it a valid interpretation in view of the 1993 application as a whole.

Second, Mr. Murphy to support his opinion declares *the 1993 application on page 14, lines 18-20, discloses that the wavelength of the laser used for ablation must be such that the laser treatment ablates the ablatable layer without damaging the photopolymer layer to an extent that it cannot subsequently be used as a printing surface*.

The examiner disagrees with Mr. Murphy's interpretation of page 14, lines 18-20 and hold it to be in error in view of the following:

The examiner holds to be fact what is found in lines 15-20 of page 14 which is :

"A laser is employed to precisely remove the slip film exposing the photopolymer underneath to subsequent flood exposure and cure. The wavelength and power of the laser should be such that the

laser treatment can ablate the slip film without damage to the photopolymer just beneath."

The laser is chosen such that ablation does not damage the photopolymer just beneath. The requirement is not that as alleged by Mr. Murphy which is the plate still be subsequently usable as a printing surface. This is a much more generous requirement than that of "without damage to the photopolymer just beneath". This addition to the disclosure is opinion as to what is meant by "without damage to the photopolymer just beneath".

As fact the examiner submits the following from page 7, of the 1993 Application, lines 18-22:

"The inventors have discovered that if a slip film, of the type already in use with flexographic plates, is modified with a strong UV absorber, a laser can be used to engrave the slip film instead of the photopolymer."

In the paragraph bridging pages 19-20 of the 1993 application, is found that in the trials where complete ablation was achieved with the sealed- CO₂ laser at 10.6 μm, i.e. in the IR range, the underlying photopolymer layer surface was highly textured, the plate surface uneven (from Table II) and the resolution was poor for the letters. 1993 applicants state:

"... it was seen that the basic idea of the laser-imaging printing plate was demonstrated, and that use of the CO₂ laser resulted in thermal ablation with consequent loss of resolution."

On page 19, lines 3-7, the 1993 application discloses:

"Two different laser systems were employed for the ablative studies: a sealed CO₂ absorbing at 10.6 μ m and a YAG at 1.06 μ m. The YAG laser was found to be essentially ineffective in causing any ablation."

The facts do not support Mr. Murphy's allegation. The examiner interprets the words of pages 19-20 to mean the sealed- CO₂ laser ablation experiments did not meet the standard of page 14 that the photopolymer just beneath remain "without damage".

Third, Mr. Murphy also declares **as one of skill in the art that the 1993 application experiments indicate a preference for IR lasers as well as UV lasers.**

The examiner disagrees for the following reasons. She cites the UV laser experiment of Example 4 page 21, lines 22-26 of 1993 application

"Unfortunately, since the styrene-isoprene rubber used to make the photopolymer is also very strongly absorbing at this wavelength, some damage to the surface occurred, especially at higher fluences. Where thermal damage occurred, resolution was poor."

Thus, applicants of 1993 application in the examiner's opinion did not view at the time of filing a loss in resolution a good outcome.

Example 5 of the 1993 application is directed to optimizing the fluences of the UV laser systems. On page 5, the optimized result of Example 5 was described in lines 22-24 as *"no damage to the plate surface"* and achieving *"a very sharp image of the ablated area with good resolution "* after subsequent flood exposure and development.

The results of Example 6, wherein a xenon fluoride excimer laser at 351 nm, i.e. UV laser, was used, applicants found on page 25, lines 4-9, the following:

"Microscopic examination confirmed that the image quality for all fluences was good, giving sharp profiles. However the edges were rounded due to insufficient doses in those areas. There was no indication of surface thermal damage and the plate surface was smooth and even in all cases."

Example 7 results using the same laser were as follows on page 25, lines 27-28, *"Once again, the image quality was excellent for all fluences."* Example 7 was drawn to using a mixture of UV absorbers to improve results of the Example 1 systems. Applicants reported testing only the printing plates of Examples 6 and 7 for print quality. The results were *"The letters printed were sharp and undistorted."* from page 26, lines 4-5. All of these facts lead the examiner to believe applicants of the 1993 application did not show a preference for IR lasers as alleged by Mr. Murphy.

The examiner also believes the IR laser systems in Example 3 do not as disclosed meet the requirement of page 14 of the 1993 application, i.e. *"The wavelength and power of the laser should be such that the laser treatment can ablate the slip film without damage to the photopolymer just beneath."* The *"without damage to the photopolymer just beneath"* standard is much higher than can the imaged plate be used as a printing plate. Applicants in Examples 4-8 of the 1993 application show how to achieve their page 14 requirement. They show it with UV lasers. They do not show it with IR lasers. The examiner believes Mr. Murphy's allegation that the IR laser is preferred in view of the 1993 application to be in error and that the facts support the this belief.

Fourth, Mr. Murphy admits the YAG laser of Example 3 was not effective in causing ablation under the particular operating conditions of the 1993 application. The examiner states

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the 1993 application discloses *"The YAG laser was found to be essentially ineffective in causing any ablation."* To overcome this fact of the record, Mr. Murphy states *"those skilled in the art would have understood that the absence of ablation resulted from operating the laser at the relatively low power level that was being tested in Example 3, and that this could easily be remedied by operating the laser at a higher power level."* He offers as evidence to support his position the 1993 disclosure of Table II wherein applicants further experimented with various CO₂ laser intensity levels.

The examiner disagrees with this interpretation of the 1993 application. The examiner has already addressed the showing of this group of changes yielding a plate that was not yet up to the standard sought by applicants of the 1993 application. Further, Mr. Murphy does not offer any outside evidence other than his statement that workers in the art in 1993 would have recognized that the YAG laser reported as bluntly "essentially noneffective" would ablate the slip layer as designed by applicants of the 1993 application. There is no other evidence given to overcome this direct statement. There is no art showing the materials would be known to be ablative with the YAG laser in 1993. The examiner does not believe that Mr. Murphy's allegation in view of the blunt statement of the 1993 application is sufficient to overcome the non working example disclosed without further facts to support his statement. Thus, there is one species of IR laser *"essentially ineffective in causing any ablation"* and one wavelength of IR found marginally useful but not up to the standard set on page 14 of the 1993 application and desired by the 1993 applicants. Further, with respect to using a more intense level, the examiner again notes the UV laser experiment of Example 4 page 21, lines 22-26 of 1993 application

"Unfortunately, since the styrene-isoprene rubber used to make the photopolymer is also very strongly absorbing at this wavelength, some damage to the surface occurred, especially at higher fluences. Where thermal damage occurred, resolution was poor."

The simple use of higher fluences does not in and of itself give a working system as set forth by the 1993 application. The interaction of photopolymerizable layer and ablation layer with the laser chosen is not so easily addressed in the examiner's opinion in view of the facts of what the 1993 application set forth.

Fifth, Mr. Murphy states a "*'UV absorber' is a material that absorbs the radiation used during the curing process, rendering the ablation layer opaque to such radiation. A material would be considered to be a 'UV absorber' according the 1993 patent application so long as it absorbs UV radiation, whether or not it also happens to absorb IR radiation.*"

The examiner disagrees with Mr. Murphy's interpretation at one point. The UV absorber of the 1993 application must be in combination with the photopolymerizable layer be as set forth on the paragraph bridging pages 9-10, absorbent in the UV range will cure the photopolymer layer beneath the slip layer. The entire 1993 specification is directed to the presence of UV absorbers in the slip layer and to UV absorbers that are separate from the binders, i.e. polymer matrices. Thus, the UV absorber must be present sufficiently to block the UV radiation that might be used to image the layer below. The binder must be compatible with this UV absorber. There is no requirement that the UV absorber be an IR absorber or an IR absorber of sufficient quantity to cause ablation of the slip layer. The examiner does agree the UV absorber could be IR absorbent. Such is not excluded by the 1993 applicants but it is not required either.

Mr. Murphy does not address the issue of photopolymerizable layers being other than UV polymerizable or whether the UV absorber would be recognized by workers of skill in the art to be necessary or not. There is no evidence given to remove the issue of missing limitations to UV absorbers and UV imageable photopolymerizable layers.

The examiner does not find the Murphy Declaration sufficient to remove the rejection addressed. She accepts that the laser ablatable layers of the 1993 application are not limited to UV ablatable layers, but the broad class of laser ablatable layers are those so limited on page 14 as follows:

"A laser is employed to precisely remove the slip film exposing the photopolymer underneath to subsequent flood exposure and cure. The wavelength and power of the laser should be such that the laser treatment can ablate the slip film without damage to the photopolymer just beneath."

In view of the 1993 application showing that only one of two IR systems chosen worked and that the one that worked didn't work up to the standard set, the examiner maintains her rejection based on the failure of the 1993 application to give sufficient written description to support the sub generic species of IR ablatable layers as found in claims 15-22, 25-28 and 40.

12. Applicant's arguments filed October 24, 2002 have been fully considered but they are not persuasive. Applicants arguments directed to Fan depend upon applicant's showing the 1993 parent application shows sufficient support for claims 15-20 and 25-27 to show applicants were in possession of the claimed invention before the filing date of Fan in 1995. If this is found true then Fan would be no longer applicable. Thus, the Fan rejection stands or falls with the rejection of claims 15-22 and 25-28 under 35 USC 112, first paragraph, as containing subject

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matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants presented the Murphy Declaration which was addressed by the examiner in preceding paragraphs of this Office action. Applicants traverse the rejection because it is unsupported by any evidence as to how those skilled in the art would interpret Applicant's 1993 priority document and is directly refuted by the evidence of record. The examiner believes she has put forth sufficient evidence in her rejection to support the lack of written description. The only arguments not discussed above with regard to the sufficiency of the Murphy declaration are arguments directed to "the unpredictability of the chemical art of ablatable layers". Applicants allege the examiner has presented no credible evidence such layers are unpredictable. The examiner has added such evidence to her rejection. However, she does accept that in view of the Murphy declaration and the Scott Paper (GB 1,492,070) disclosure on page 2, lines 23-45 that if an IR ablatable layer is to be used on a photosensitive layer as an in situ mask then adapting the IR layers to be generally useful as such is within the skill of the ordinary worker in the art. The examiner does not agree that meeting the standards set by the 1993 application on page 14 are so predictable because the nature of the photo sensitive layer beneath becomes important to avoid damaging the photopolymerizable surface of the layer underneath the ablatable layer. It is this unpredictability that was considered in removing Scott Paper as applicable prior art. Applicants allege that upon review of the 1993 application, that the 1993 applicants were in possession of an ablation layer that imparts opacity to non-infrared actinic radiation. The examiner agrees the 1993 applicants were in possession of such a layer but the issue is whether the applicants were in possession of this generic group of layers, or as the

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examiner believes, only in possession of those layers opaque to UV radiation at which the photopolymerizable layer below would be curable. All of the 1993 application is directed to UV opacity. There is no broader group opacity given. Such opacity includes opacity in the visible range as well as in the IR range. . With respect to the need for a UV absorber in the instant claims, the 1993 disclosure states the advantages of the UV absorber throughout the specification and never discloses not using it., Thus, the entire application is drawn to the advantages of a UV sensitive system in combination to a laser ablatable layer. See Gentry Gallery 134 F.3d at 1473 at 1480, 45 USPQ 2d 1498 at 1503 (Fed. Cir. 1998) and In re Sus, 306 F2d. 494, 504, 134 USPQ 301, 309 (CCPA 1962). Thus, the instant claims are broader than the written disclosure in this respect and fails to include the essential element of the UV absorber. The rejections stand.

13. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott Paper Company (GB 1,492,070) and in view of the Murphy Declaration filed October 24, 2002 further in view of Law et al (4,492,750). Scott Paper Company discloses on page 1, lines 66-79 a presensitized planographic printing plate having a layer of material which is sensitive to ultraviolet light, is provided with a coating which is opaque to ultraviolet light and is capable of being removed or rendered transparent to ultraviolet light by non-UV laser radiation. The layer that is sensitive to ultraviolet light is disclosed as any one of the commercially available types of either positive working or negative working plates. The nature of the presensitized printing plate portion of the plate of the Scott invention is not critical for the reason that once the mask is formed in situ and the plate is exposed to ultraviolet light, development proceeds in a conventional manner. The layer of material which is opaque to ultraviolet light and capable of being removed or rendered transparent to ultraviolet light by non-UV laser radiation can be a

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dispersion of metal or carbon particles in an organic binder. The opaque layer must be thick enough to be opaque to ultraviolet while remaining thin enough to be vaporized and removed rapidly with a minimum amount of radiant energy applied by the laser for this purpose. Scott Paper Company discloses this in the paragraph bridging pages 1-2. Scott Paper Company also discloses selection of an appropriate laser for removing the layer of material which is opaque to ultraviolet light is well within the skill of the ordinary worker in the art to which their invention pertains. Means for modulating a laser beam to record information on a substrate is well known also. Scott Paper Company goes on to disclose "In general they can be characterized as scanning mechanisms which cause the beam to traverse the area, delivering energy in a predetermined manner." Scott Paper Company has an example of a photopolymerizable layer wherein carbon black is the UV absorbant and Nitrocellulose is the binder. Carbon black is well known in the art to be an infrared absorber as well. The only working example of Scott Paper Company also like the instant applicants uses a binder not in the list given. Scott Paper Company teaches the instant element of claims 15-16 with the exception of the binders given in the instant claims and not specifically mentioning using an IR laser for the ablation. With respect to instant claims 15 and 16, the examiner states in view of Mr. Murphy's expert opinion that the disclosure of one IR ablatable layer in the materials of the 1993 application as being sufficient to give support for the instant claims which have no binder in common with the disclosure of the sole IR ablatable material disclosed functional enough to form a working plate, then the disclosure of Scott Paper Company is sufficient to make obvious the use of any binders used in non-UV laser radiation ablatable layers known in the art before the 1993 disclosure as well as any ultraviolet lithographic negative acting presensitised plates known before the 1993 disclosure, because the

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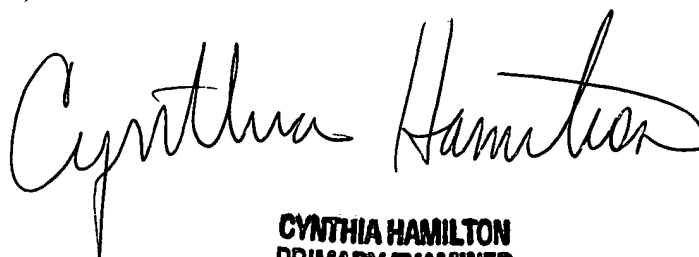
predictability of the art at the filing of the 1993 disclosure is so predictable to allow such breadth of obviousness. Law et al teach one kind of laser ablatable layers known at the time of the 1993 disclosure. Law et al make use of polymeric binders inclusive of polyesters, polyacrylates, polymethacrylates, and polycarbonates mixed with IR absorbing compounds to make laser ablatable layers. With respect to instant claims 15-16 and to Scott Paper company and in view of Mr. Murphy's declaration as to the level of skill in the art, the use of known ablatable layers such as those of Law et al as the non-ultraviolet removable layer of Scott Paper and thus be used in the processes of Scott Paper would have been the prima facie obvious use of an art recognized available laser removable material as directed by Scott Paper. In Law et al, see particularly the abstract, col. 5, lines 9-25, col. 7, lines 12-23.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Cynthia Hamilton whose telephone number is (703) 308-3626. The examiner can normally be reached on Monday-Friday, 9:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Baxter can be reached on (703) 308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of papers not received regarding this communication or earlier communications, or of a general nature or relating to the status of this application or proceeding should be directed should be directed to the Customer Service Center of Technology Center 1700 whose telephone number is (703) 306-5665.

Cynthia Hamilton
February 24, 2003



**CYNTHIA HAMILTON
PRIMARY EXAMINER**